

LISTING OF CLAIMS:

1. (Currently amended) A compiler for processing computer program source code, to generate object code to be executed by a RISC (Reduced Instruction Set Computer) type of CPU (central processing unit) of a computer, said object code including code for an instruction for judging the value of a bit variable and an instruction for assigning a value to a bit variable, said bit variables being held in a memory or a register of said computer, said source code including a bit operational expression that expresses a result value for a bit variable in accordance with a combination of respective values of a plurality of bit variables, wherein comprising:

a convertor, responsive to input source code, to generate object code, said object code is generated such that, when said object code is executed, processing is performed whereby a right-side portion of said bit operational expression which is written with in said source code is being expressed in the object code as converted to a condition judgement expression that is in accordance with Boolean logic, said condition judgement expression providing a result that is "true" when said combination of respective values has a predetermined first Boolean logic relationship and a result that is "false" when said combination of respective values has a predetermined second Boolean logic relationship which judges the respective values of bit variables that are operands of said bit operational expression, and whereby being expressed as instructions in the object code that selectively assign a predetermined first binary value and a predetermined second binary value that is the inverse of said first binary value are selectively assigned to a bit variable which holds a result of said bit operational expression, in accordance with whether a "true" or a "false" decision is obtained from said condition judgement expression.

2. (Original) The compiler according to claim 1, wherein a set of bit variables held in an internal register of said CPU can be processed as a register variable, and wherein said condition judgement expression judges the values of respective ones of said set of bit variables.

3. (Original) A data storage medium having a compiler as claimed in claim 1 stored therein.

4. (Currently amended) A computer readable medium comprising instructions being executed by a computer, the instructions for compiling program conversion apparatus for reading out the contents of a source code file which is stored as a program, and for converting said source code file to and generating an object code file whose contents are to be executed by a RISC (Reduced Instruction Set Computer) type of CPU (central processing unit) of a computer, said object code including an instruction for judging the value of a bit variable and an instruction for assigning a value to a bit variable, said bit variables being held in a memory or a register of said computer, said source code file contents including a bit operational expression that expresses a result value for a bit variable in accordance with a combination of respective values of a plurality of bit variables, the instructions for implementing the steps of:
wherein

reading out the contents of the source code file; and

said program conversion apparatus comprises memory means having stored therein a compiler for generating object code responsive to the contents of the source code file, including such that, when said object code is executed, processing is performed whereby expressing a right-side portion of said bit operational expression which is written within said source code is converted to as a condition judgement expression that is in

accordance with Boolean logic in the object code, said condition judgement expression providing a result that is "true" when said combination of respective values has a predetermined first Boolean logic relationship and a result that is "false" when said combination of respective values has a predetermined second Boolean logic relationship which judges the respective values of bit variables that are operands of said bit operational expression, and whereby as instructions in the object code that selectively assign a predetermined first binary value and a predetermined second binary value that is the inverse of said first binary value are selectively assigned to a bit variable which holds a result of said bit operational expression, in accordance with whether a "true" or a "false" decision is obtained from said condition judgement expression.

5. (Currently amended) ~~The program conversion apparatus~~computer readable medium according to claim 4, wherein ~~said compiler is capable of generating object code whereby a set of bit variables held in an internal register of said CPU are~~can be processed as a register variable, and wherein ~~and wherein~~ said condition judgement expression judges the values of respective ones of said set of bit variables.

6. (Currently amended) A program conversion method for reading out the contents of a source code file which is stored as a program, and generating from said source code file contents an object code file to be executed by a RISC type of CPU of a computer, said object code file including an instruction for judging the value of a bit variable and an instruction for assigning a value to a bit variable, said bit variables being held in a memory ~~or a register~~ of said computer, said source code file contents including a bit operational expression that expresses a result value for a bit variable in accordance with a combination of respective values of a plurality of bit variables wherein, comprising the steps of:

reading out the contents of the source code file,

~~said object code is constituted such as to effect processing whereby generating object~~
code responsive to the source code file, including expressing a right-side portion of said bit
~~operational expression which is written with in said source code is converted to~~ as a condition
judgement expression that is in accordance with Boolean logic, said condition judgement
expression providing a result that is "true" when said combination of respective values has a
predetermined first Boolean logic relationship and a result that is "false" when said combination
of respective values has a predetermined second Boolean logic relationship which judges the
~~respective values of bit variables that are operands of said bit operational expression, and~~
~~whereby~~ as instructions in the object code that selectively assign a predetermined first binary
value and a predetermined second binary value that is the inverse of said first binary value are
~~selectively assigned~~ to a bit variable which holds a result of said bit operational expression, in
accordance with whether a "true" or a "false" decision is obtained from said condition judgement
expression.

7. (Currently amended) A program conversion method according to claim 6, wherein ~~said~~
~~compiler is capable of generating object code whereby~~ a set of bit variables are can be held in an
internal register of said CPU and processed as a register variable, and wherein said condition
judgement expression judges the values of respective ones of said set of bit variables.

8. (Currently amended) A microcomputer having a RISC (Reduced Instruction Set
Computer) type of CPU (central processing unit) which can execute an instruction for judging
the value of a bit variable and an instruction for assigning a value to a bit variable, wherein said
microcomputer comprises:

at least one program memory having stored therein a program which has been converted from source code to object code by a compiler, ~~wherein said object code is constituted such as to effect processing whereby providing that,~~ when a bit operational expression that expresses a result value for a bit variable in accordance with a combination of respective values of a plurality of bit variables appears within said source code, ~~respective values of bit variables which are operands of said bit operational expression are judged, and respectively different values are assigned to a bit variable which holds a result of said bit operational expression, in accordance with a result of said judgement~~ a right-side portion of said bit operational expression is expressed in corresponding instructions in the object code as a condition judgement expression that is in accordance with Boolean logic, said condition judgement expression providing a result that is "true" when said combination of respective values has a predetermined first Boolean logic relationship and a result that is "false" when said combination of respective values has a predetermined second Boolean logic relationship, and a predetermined first binary value and a predetermined second binary value that is the inverse of said first binary value are selectively assigned to a bit variable which holds a result of said bit operational expression, in accordance with whether a "true" or a "false" decision is obtained from said condition judgement expression.

9. (Currently amended) A microcomputer as claimed in claim 8, wherein said object code is generated by said compiler such that said program stored in said program memory processes a set of bit variables appearing in said source code as a register variable, which is held in an internal register of said CPU, and ~~whereby~~ wherein said condition judgement expression is applied to each of respective bit variables of said set.

10. (New) A compiler for processing computer program source code, to generate object code to be executed by a RISC (Reduced Instruction Set Computer) type of CPU (central processing unit) of a computer, said object code including code for an instruction for judging the value of a bit variable and an instruction for assigning a value to a bit variable, said bit variables being held in a register of said computer, said source code including a bit operational expression that expresses a result value for a bit variable in accordance with a combination of respective values of a plurality of bit variables, comprising:

a convertor, responsive to input source code, to generate object code, a right side portion of said bit operational expression in said source code being expressed in the object code as a condition judgment expression that is in accordance with Boolean logic, said condition judgement expression providing a result that is "true" when said combination of respective values has a predetermined first Boolean logic relationship and a result that is "false" when said combination of respective values has a predetermined second Boolean logic relationship, and being expressed as instructions in the object code that selectively assign a predetermined first binary value and a predetermined second binary value that is the inverse of said first binary value to a bit variable which holds a result of said bit operational expression, in accordance with whether a "true" or a "false" decision is obtained from said condition judgement expression.

11. (New) A computer readable medium comprising instructions being executed by a computer, the instructions for compiling the contents of a source code file which is stored as a program, and generating an object code file whose contents are to be executed by a RISC (Reduced Instruction Set Computer) type of CPU (central processing unit) of a computer, said object code including an instruction for judging the value of a bit variable and an instruction for assigning a value to a bit variable, said bit variables being held in a register of said computer,

said source code file contents including a bit operational expression that expresses a result value for a bit variable in accordance with a combination of respective values of a plurality of bit variables, the instructions for implementing the steps of:

reading out the contents of the source file; and

generating object code responsive to the contents of the source code file, including expressing a right-side portion of said bit operational expression in said source code as a condition judgement expression that is in accordance with Boolean logic in the object code, said condition judgement expression providing a result that is "true" when said combination of respective values has a predetermined first Boolean logic relationship and a result that is "false" when said combination of respective values has a predetermined second Boolean logic relationship, and as instructions in the object code that selectively assign a predetermined first binary value and a predetermined second binary value that is the inverse of said first binary value to a bit variable which holds a result of said bit operational expression, in accordance with whether a "true" or a "false" decision is obtained from said condition judgement expression.

12. (New) A program conversion method for reading out the contents of a source code file which is stored as a program, and generating from said source code file contents an object code file to be executed by a RISC type of CPU of a computer, said object code file including an instruction for judging the value of a bit variable and an instruction for assigning a value to a bit variable, said bit variables being held in a register of said computer, said source code file contents including a bit operational expression that expresses a result value for a bit variable in accordance with a combination of respective values of a plurality of bit variables, comprising the steps of:

reading out the contents of the source code file,

generating object code responsive to the source code file, including expressing a right-side portion of said bit operational expression as a condition judgement expression that is in accordance with Boolean logic, said condition judgement expression providing a result that is "true" when said combination of respective values has a predetermined first Boolean logic relationship and a result that is "false" when said combination of respective values has a predetermined second Boolean logic relationship, and as instructions in the object code that selectively assign a predetermined first binary value and a predetermined second binary value that is the inverse of said first binary value to a bit variable which holds a result of said bit operational expression, in accordance with whether a "true" or a "false" decision is obtained from said condition judgement expression.

13. (New) The compiler according to claim 1, further comprising a writer, the writer storing the object code generated by the convertor in a memory.

14. (New) The computer readable medium according to claim 4, further comprising instructions for implementing the steps of storing the object code in a memory.

15. (New) The program conversion method according to claim 6, further comprising storing the object code in a memory.

16. (New) The microcomputer as claimed in claim 8, wherein the at least one program memory has stored therein the source code.

17. (New) The compiler according to claim 10, further comprising a writer, the writer storing the object code generated by the convertor in a memory.

18. (New) The computer readable medium according to claim 11, further comprising instructions for implementing the steps of storing the object code in a memory.

19. (New) The program conversion method according to claim 12, further comprising storing the object code in a memory.

20. (New) The computer readable medium of claim 4, further comprising instructions for implementing the steps of executing the object code file contents.